REMARKS

Claims 1-17 and 19-33 are currently pending. Claim 18 was previously cancelled. Claims 1, 3, 8-17, and 19-31 are currently withdrawn as being directed to non-elected subject matter. Claims 2, 4-7, and 32-33 are currently subject to examination.

It is believed that no new matter has been added and no additional claims fees are due.

Claim Rejection - 35 U.C.C §103(a)

Claims 2, 4-7, 32 and 33 are rejected under 35 U.S.C. §103(a) as being unpatentable Sharma et al., *Transcription factor decoy approach to decipher the role of NF-kappaB oncogenesis*, Anticancer Research 16(1): 61-69 (1996) (hereafter, "Sharma"), in view of Dzau et al., U.S. 2003/0186922, published October 2, 2003 (hereafter, "Dzau") and Weintraub et al., Retinoblastoma protein switches the E2F site from positive to negative element, Nature 358(6383):259-61 (1992) (hereafter, "Weintraub"). Specifically, the Examiner asserts:

> Sharma et al. teaches that the NF-kB transcription factor complex participate[s] in the induction of numerous cellular and viral genes, and the role of NF-kB in oncogenesis. Sharma et al. teaches transcription factor decoy approach to decipher the role of NF-kappaB in oncogenesis. In an effort to decipher the role of homo- vs. heterodimeric NF-kappaB in regulating tumor cell growth, Sharma et al. used a decoy approach to trap these complexes in vivo. Using double stranded phosphorothioates as a direct in vivo competitor for homo- vs heterodimeric NF-kappaB, Sharma et al. demonstrate that decoys more specific to RelA inhibit [] tumor cell growth in vitro… It is noted that double stranded NF-kB TFD comprising three end-to-end repeated copies of consensus NF-kB binding site (5'-GGG GAC TTT C-3'), which is 10 nucleotide base pairs. Sharma et al. does not explicitly teach the limitations (i) "10 end-to-end repeated copies" recited in claim 2, "15 end-to-end repeated copies" recited in claim 32, and "20 end-to-end repeated copies" recited in claim 33, and (ii) further comprising at least one tissue-specific promoter recited in claim 4.
>
> With regard to the limitations (i) "10 end-to-end repeated copies" recited in claim 2, "15 end-to-end repeated copies" recited in claim 32, and "20 end-to-end repeated copies" recited in claim 32, Dzau et al. teaches the use of oligodeoxynucleotide decoys for the prophylactic or therapeutic treatment of diseases associated with the binding of endogenous transcription factors to genes involved in cell growth, differentiation and signaling or to viral genes. By inhibiting endogenous trans-activating factors from binding transcription regulatory regions, the decoys modulate gene expression and thereby regulating

> pathological processes including inflammation, intimal hyperplasia, angiogenesis, neoplasia, immune response and viral infection. Dzau et al. further teaches that the decoys contain sufficient nucleotide sequence to ensure target transcription factor binding specificity and affinity sufficient for therapeutic effectiveness.... Accordingly, cis element flanking regions may be present and concatemer oligonucleotides may be constructed with serial repetitions of the binding and/or cis element...
>
> Dzau et al. teaches that the decoys may comprise a portion of a larger plasmid, including viral vectors, capable of episomal maintenance or constitutive replication in the target cell to provide longer term or enhanced intracellular exposure to the decoy sequence....
>
> Furthermore, Weintraub et al. teaches that the role of the E2F protein in E1a promoter activity was examined in transfection assays in which a competitor plasmid containing E2F binding sites was cotransfected with he plasmid pE1aCAT, which contains the E1a promoter fused to the gene for chloramphenicol acetyltransferase (CAT)...
>
> Based on the combined teachings of Sharma et al., Dzau et al., and Weintraub et al., the ranges of the number of end-to-end repeats present in a NF-kB transcrption factor decoy depend on the given cellular and viral genes to be inhibited in a given tissue in a desired in vitro experimental setting and/or intended in vivo therapeutic setting. The determination of the ranges of the number of end-to-end serial repeats in a NF-kB transcription factor decoy is a process of optimization.

Applicant traverses the rejection and requests reconsideration.

A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) (MPEP 2144.05). The Examiner is asserting that the number of end-to-end repeats is a matter of optimization, in view of Weintraub and Dzau. Applicant disagrees.

Sharma does not recognize the number of end-to-end repeats as a result-effective variable. For example, Sharma gives no reasoning for the inclusion of three binding sites, does not compare the efficiency of that construct to a construct having fewer binding sites, and does not recognize the stabilizing effect of a greater number of end-to-end serial repeats. Thus,

Sharma does not recognize the parameter - the number of serial repeats of a binding site - as a result-effective variable in a decoy.

The Examiner has applied Weintraub for its asserted teaching of a promoter designed for analysis of E2F. However, as the Examiner noted, Weintraub is primarily directed to E2F gene promoters, rather than decoys blocking gene expression. Applicant finds no teaching or suggestion in Weintraub at all of a decoy, or of the benefit of designing a decoy having serial repetitions of a transcription factor binding site. The instant claims are directed to concatemerized transcription factor decoys, not promoters.

Applicant further disagrees with the Examiner's interpretation of Dzau. However, to expedite prosecution, a signed 37 CFR §1.131 declaration swearing behind Dzau is submitted herewith. Dzau published October 2, 2003. The present application was filed December 16, 2008, and is a U.S. National Phase application of PCT/US2004/042950, filed December 20, 2004, which claims the benefit of U.S. Provisional Application No. 60/531,399, filed December 19, 2003, and U.S. Provisional Application No. 60/574,131, filed May 25, 2004. Accordingly, Dzau published less than one year before Applicant's earliest priority date, December 19, 2003.

According to 35 U.S.C. §102(a), "[a] person shall be entitled to a patent unless … the invention was … described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent." When a prior publication is not a statutory bar, a 35 U.S.C. §102(a) rejection can be overcome by antedating the publication date of the reference by submitting an affidavit or declaration under 35 U.S.C. §1.131.

Pursuant to MPEP §715 and 37 CFR §1.131, an asserted reference may be sworn behind by demonstrating prior invention, which requires a showing of facts that, "establish reduction to practice prior to the effective date of the reference, or conception of the invention prior to the

effective date of the reference coupled with due diligence from prior to said date to a subsequent reduction to practice or to the filing of the application."

Here, as shown in the signed 37 CFR 1.§131 declaration by the inventor, Walter Keith Jones, it is clear that the instant inventor conceived of the claimed subject matter prior to the publication date of Dzau and was diligent in his efforts until his constructive reduction to practice by virtue of the filing date of the U.S. Provisional Application No. 60/531,399, filed December 19, 2003.

Accordingly, it is respectfully requested that Dzau be withdrawn from the above rejection as it is not a proper reference under 35 U.S.C. §102(a).

In summary, the Examiner has conceded that Sharma does not teach all the claim elements, and has applied Dzau and Weintraub in his assertion that varying the number of end-to-end repeats of a binding site is mere optimization. Applicant submits Sharma does not teach or recognize this parameter as a result-effective variable, Weintraub is not directed to transcription factor decoys, and Dzau is not properly applied under 35 U.S.C. §102(a) in view of the Declaration under 37 C.F.R. §1.131 submitted herewith.

In view of the foregoing, Applicant respectfully submits that the rejection under 35 U.S.C. §103(a) is overcome. Reconsideration and a withdrawal of the rejection is respectfully requested.

CONCLUSION

It is believed that the present Amendment involves the introduction of no new matter and represents a complete response to the Office Action dated July 7, 2011. Applicant therefore respectfully requests entry of the present Response, reconsideration, withdrawal of the rejection under 35 U.S.C. §103, and an early allowance of claims 2, 4-7, and 32-33.

It is believed that no additional fees are required, but in the event this is incorrect, please charge any additional fees required in connection with the present Amendment to Deposit Account No. 04-1133.

Respectfully submitted,

/Jennifer L. Livingston/
Jennifer L. Livingston
Registration No. 56,404
Attorney for Applicant
DINSMORE & SHOHL LLP
1900 Chemed Center
255 E. Fifth Street
Cincinnati, Ohio 45202

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